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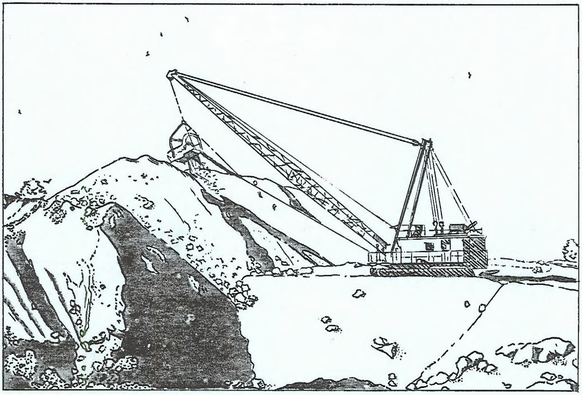

OK NM 0141015 AND OK BLM 017612
LE FLORE COUNTY, OKLAHOMA

UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
TULSA DISTRICT
OKLAHOMA RESOURCE AREA

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SOUTHEAST OKLAHOMA MANAGEMENT FRAMEWORK PLAN
AND MODIFICATION OF FEDERAL COAL LEASES
OK NM 0141015
AND
OK BLM 017612
LE FLORE COUNTY, OKLAHOMA

Prepared by

UNITED STATES DEPARTMENT OF THE INTERIOR
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UNITED STATES DEPARTMENT OF THE INTERIOR

BUREAU OF LAND MANAGEMENT
OKLAHOMA RESOURCE AREA OFFICE
200 NW Fifth Street, Room 548
Oklahoma City, Oklahoma 73102

In Reply Refer To:
OK NM 0141015
OK BLM 017612
3432 (047)

A Draft Amendment of the Southeast Oklahoma Management Framework Plan (MFP) is attached for your review and comment. The amendment is in response to applications received from Evans Coal Company and Laredo Solid Fuels, Inc. for modification of two Federal coal leases in Le Flore County, Oklahoma.

The Bureau of Land Management (BLM), Tulsa District, prepared this Draft Amendment to identify Federal coal lands within the two application areas that are acceptable for further consideration for leasing. No other Federal resources occur within the application areas. An acceptable for further consideration for leasing designation would facilitate leasing and development and avoid the bypass of isolated tracts of Federal coal.

The amendment also serves as a record of the environmental assessment for the proposed lease modifications.

Comments or suggestions concerning this document are encouraged and will be used in preparing the Final Amendment and Record of Decision. Your opinions on the adequacy of the analysis and the proposed lease modifications are requested. Governmental agencies are asked to review the document for consistency with their policies, plans and projects in the amendment area. All correspondence should be sent to this office within the 30-day comment period which ends March 13, 1989. Please address all comments to Jim Gegen. He can also be reached at (405) 231-5491 or FTS 736-5491.

Sincerely,

Paul W. Tanner
Area Manager

NOTICE

THIS DRAFT MFP AMENDMENT SHOULD BE RETAINED TO BE USED IN CONJUNCTION WITH THE FINAL MFP AMENDMENT. THE FINAL AMENDMENT WILL INCORPORATE THIS DRAFT BY REFERENCE AND INCLUDE ALTERATIONS AND CORRECTIONS OF THE DRAFT THAT ARE MADE AS A RESULT OF PUBLIC COMMENTS. THE FINAL AMENDMENT WILL ALSO INCLUDE A RECORD OF PUBLIC COMMENTS ON THIS DRAFT AND THE RESPONSES TO THOSE COMMENTS.

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CHAPTER 1

INTRODUCTION

A. PURPOSE AND NEED FOR AMENDMENT

The Southeast Oklahoma Management Framework Plan (MFP) will be amended in response to two requests for modification of Federal coal leases in Le Flore County (refer to Map 1-1). The tracts of land concerned in these modifications were not addressed in the MFP which was completed in 1980. When completed, this amendment will become a part of the MFP.

Department of Interior regulations for processing coal lease modifications are contained in Subpart 3432, Title 43, Code of Federal Regulations. This states that:

> "A lessee may apply for a modification of a lease to include coal lands or coal deposits contiguous to those embraced in a lease."

These lease modifications are based on the determination that: 1) the modifications serve the interests of the United States; 2) there is no competitive interest in the lands or deposits, and, 3) the additional lands or deposits cannot be developed as part of another potential or existing operation. This is in conformance with Subpart 3432.2(a), Title 43, Code of Federal Regulations.

B. LOCATION

Evans Coal Company proposes to lease and develop an additional 120 acres of Federal coal reserves in the Sunset Corner area which is located four miles west of Spiro, Oklahoma, and involves the following described land (refer to Map 1-2):

Township 9 North, Range 24 East, Indian Meridian, Oklahoma,

Section 25: NE1/4NW1/4,
S1/2NW1/4.

The Evans Lease Modification Area (Evans LMA) is adjacent to Evans' Federal lease OK BLM 017612. The existing lease encompasses 1,869 acres; the southern portion has been mined and is in the final stages of reclamation.

Laredo Solid Fuels, Inc. proposes to lease and develop an additional 50 acres of Federal coal reserves in the Pine Mountain area which is located two miles southwest of Heavener, Oklahoma, and involves the following described land (refer to Map 1-3):

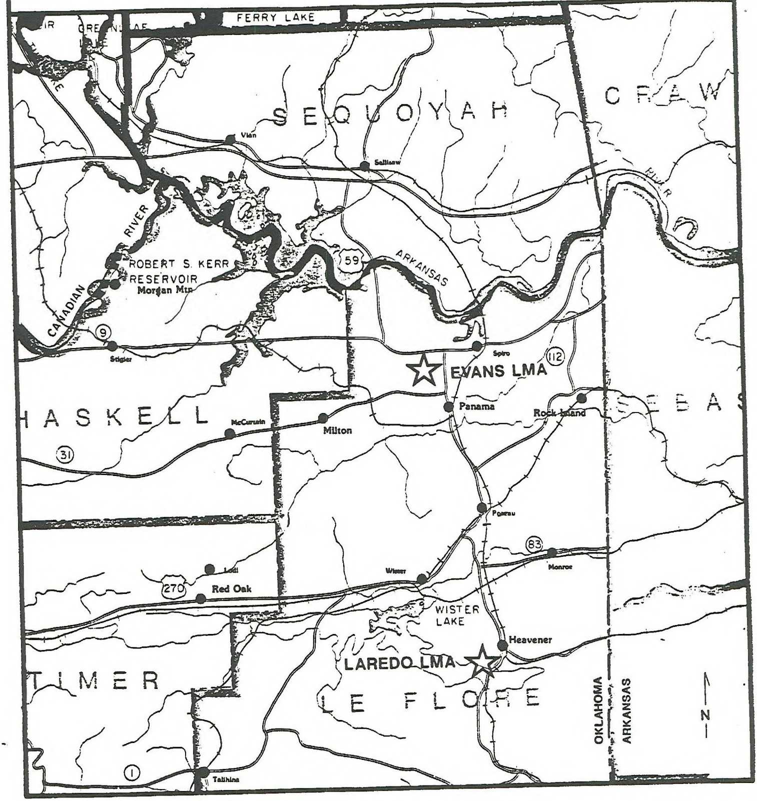
Township 5 North, Range 25 East, Indian Meridian, Oklahoma,

Section 25: NE1/4SW1/4NW1/4,
S1/2SW1/4NW1/4,
N1/2SE1/4NW1/4.

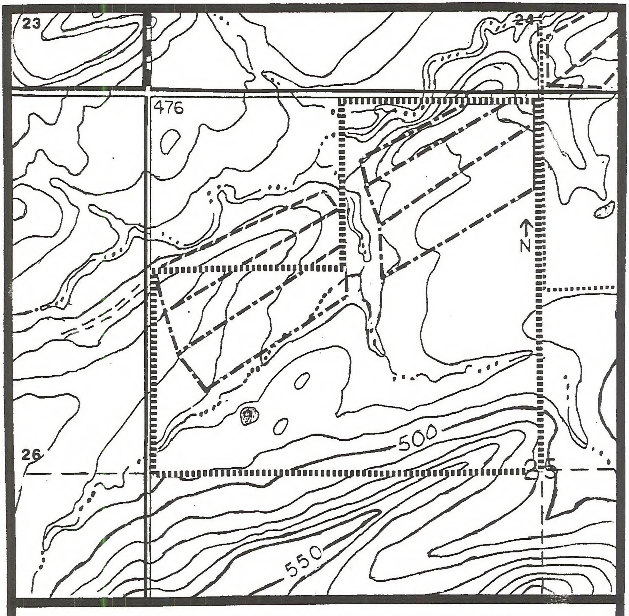
MAP 1-1

GENERAL LOCATION MAP

TWO LEASE MODIFICATION AREAS AND SURROUNDING TOWNS



MAP 1-2. EVANS LEASE MODIFICATION AREA



T. 9 N., R. 24 E. SECTION 25: NE1/4NW1/4, S1/2NW1/4 IM

ıııııııııı LEASE MODIFICATION AREA

········ BOUNDARY FOR FEDERAL COAL LEASE OK BLM 017612

··—·· PROPOSED DISTURBANCE AREA OF FEDERAL COAL

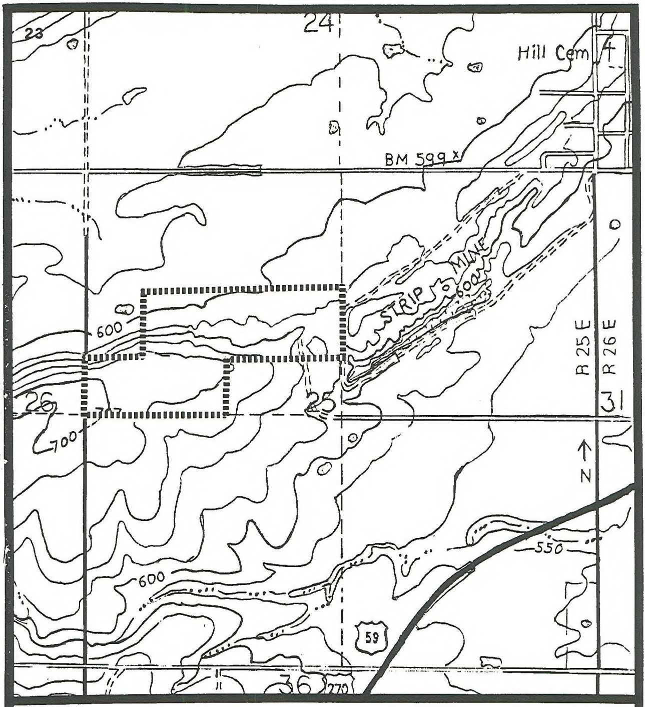
— — — PROPOSED DISTURBANCE AREA OF PRIVATE COAL

- - - EXISTING TEST BURN

—— SECTION LINE

(1/4 MILE)
1,320 FEET

MAP 1-3. LAREDO LEASE MODIFICATION AREA



T. 5 N., R. 25 E., SECTION 25:

NE1/4SW1/4NW1/4, S1/2SW1/4NW1/4, N1/2SE1/4NW1/4 IM

ııııııı LEASE MODIFICATION AREA

(1/4 MILE)
1,320 FEET

The Laredo Lease Modification Area (Laredo LMA) is adjacent to Laredo's Federal lease OK NM 0141015. The existing lease encompasses 360 acres, the southeast portion is currently being mined.

C. PLANNING PROCESS

Before a Federal coal lease may be modified, Federal regulations require that the lands be included in a comprehensive land use plan (such as the Southeast Oklahoma MFP) or other type of land use analysis. The Southeast Oklahoma MFP was developed through the following process:

1. An inventory and description of all natural resources and the socioeconomic status within the Southeast Oklahoma Planning Unit was completed by the Oklahoma Resource Area staff of the BLM in 1978-80.

2. Recommendations were made for the best use and protection of each natural resource. An analysis of competing demands for these resources was conducted.

3. Decisions were made for the best land use, balancing natural resource use conflicts and socioeconomic needs.

Throughout the land use planning process in southeast Oklahoma, assistance was provided by numerous individuals through correspondence, personal contacts, workshops, open houses and public meetings. The decisions resulting from this effort are not inflexible. As new situations arise, the land use decisions may be changed through amendment.

The amendment process simultaneously assesses the environmental consequences of the lease modifications and their effect on the Southeast Oklahoma MFP. The MFP amendment procedure, conducted by the Oklahoma Resource Area staff, includes the following essential elements:

1. Public and interagency participation and coordination, through *Federal Register* notification, news releases and letters requesting regulatory and project planning information in the area.

2. Identification of the coal leasing issue and planning criteria to focus the planning. Collection and analysis of resource data and description of the Proposed Action and Alternatives.

3. Analysis of the environmental consequences of amending the MFP and selection of the BLM **Preferred Alternative.**

4. Consistency review, including Governor's review, and alteration of the **Preferred Alternative**, if necessary.

5. The Area Manager makes a finding of no significant impact, if none is disclosed in the environmental assessment, and the BLM Tulsa District Manager recommends amendment to the BLM New Mexico State Director. The State Director reviews and makes the decision. Public notice of the amendment decision is published, clearly explaining how the MFP would be amended.

6. Protests will be received for 30 days following the notice of the amendment decision. The right to protest applies to any person who has participated in the amendment process and has an interest which may be adversely affected by the amendment decision. However, only those issues of record submitted to the District Manager during the amendment process may be subject to protest.

7. The amendment decision may be implemented only after any protests are resolved and 30 days after the public notice.

D. CONFORMANCE STATEMENT

The proposed lease modification areas are located within the boundary of the BLM's Southeast Oklahoma Planning Unit 1-08. Southeast Oklahoma MFP Minerals Decision M-1.1 designated areas acceptable for further consideration for leasing to satisfy expected demand for Federal coal through 1985. The LMAs were not included in the minerals decision because of small surface-mineable acreage, thinness of the coal beds and limited amount of recoverable coal reserves. Mining in adjacent areas further limited the competitive potential of the reserves. The public participation process did not identify the LMAs as having high development potential.

No other Federal, state or local land use plans address coal development on the LMAs.

Based on recent coal development trends and production requirements, the lease modification applications submitted by Evans and Laredo indicate that the LMAs should be mined in conjunction with adjoining Federal and private coal leases. Failure to recover the reserves as part of ongoing operations would likely result in bypass of the unleased Federal coal. The applications involve leasing of areas not previously identified in the MFP as being available for further leasing consideration. This amendment is being prepared to determine whether all, none, or part of the LMAs will be designated as acceptable for further consideration for leasing.

CHAPTER 2

PLANNING ISSUES AND CRITERIA

A. MAJOR ISSUES AND CONCERNS

This amendment is being prepared in response to two applications for coal lease modification. The modifications are the only Federal actions addressed in this document. Land use planning requirements for future Federal actions involving the BLM in Oklahoma will be addressed in a Resource Management Plan (RMP), scheduled for completion in May 1992.

During the development of the Southeast Oklahoma MFP, the following public issues and concerns relating to surface mining were identified which also require consideration in this coal-related MFP Amendment:

1. The local residents view coal development as a means for lowering the unusually high unemployment rate, increasing income and stemming the flow of young people out of the area.

2. Local residents also desire as little change in the community as possible, with no serious disruption of traditional values and patterns.

3. A steady rise in coal development levels that can be maintained over a long period of time is preferred over a rapid expansion and decline of mining operations.

4. The split-estate situation of Federal coal under private surface is a factor in issuing lease modifications. Non-competitive coal lease modifications may not be issued for lands involving qualified surface owners.

Verification and up-dating of the issues and concerns will continue and the results will be carried forward in the final amendment as follows:

1. A notice of intent to amend the MFP was published in the Federal Register on page 44530 on November 3, 1988. Federal, state and local entities that would be concerned with the plan or have land-use regulatory authority in the vicinity of the proposed modifications were also contacted.

2. A news release was mailed on October 22, 1988, to local newspapers asking interested parties to identify issues of concern and potential impacts that should be addressed.

3. This Draft MFP Amendment will be distributed in February 1989 for a 30-day public review and comment period.

4. A public meeting may be held during the 30-day review and comment period if requested of the BLM Tulsa District Manager.

5. Public comments will be considered in the preparation of the Final MFP Amendment which will be completed and made available to the public in April 1989.

B. PLANNING CRITERIA

The amendment process and resulting management decisions regarding the coal lease modifications will be directed by the following criteria:

1. Application of coal unsuitability criteria (43 CFR 3461).
2. Resolution of conflicts with existing MFP decisions.
3. Coordination with Federal, state and local entities.
4. Surface owner consultation.
5. Results of public participation and review.

CHAPTER 3

ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. DESCRIPTION OF THE PROPOSED ACTION

Introduction

The Proposed Action (Preferred Alternative) is to amend the Southeast Oklahoma MFP and designate the following lands as acceptable for further consideration for leasing:

Applicant: Evans Coal Company (OK BLM 017612)
Township 9 North, Range 24 East, Indian Meridian, Oklahoma,

Section 25: NE1/4NW1/4,
S1/2NW1/4.

and

Applicant: Laredo Solid Fuels, Inc. (OK NM 0141015)
Township 5 North, Range 25 East, Indian Meridian, Oklahoma,

Section 25: NE1/4SW1/4NW1/4,
S1/2SW1/4NW1/4,
N1/2SE1/4NW1/4.

This action is in response to two requests for modification of Federal coal leases in Le Flore County. Evans Coal Company (Evans) is currently mining Federal coal in the Sunset Corner area, near Spiro, Oklahoma. Laredo Solid Fuels, Inc. (Laredo) is mining Federal coal in the Pine Mountain area, near Heavener, Oklahoma.

Proposed Operations - Evans

Geologic information for the Evans LMA indicates the mineable coal is the Hartshorne coal bed with an estimated average thickness of 5.0 feet. The Lower and Upper Hartshorne are separated by an estimated 3 inches of shale in this area. The coal is considered to be a good quality low volatile bituminous rank coal which could be used as a compliance coal. The Evans LMA contains an estimated 63,000 tons of surface mineable coal and 325,000 tons of coal recoverable by underground methods. Surface mineable reserve estimates are made to a depth of 90 feet.

Projected production from surface operations on the Evans LMA would be 8,500 tons per month. The strippable coal would be mined in one year or less at the projected rate of production. Underground mining would be in conjunction with operations on the existing lease area and the production rate would depend on the market conditions. Ten acres of land would be surface mined and another 26 acres would be disturbed for topsoil storage, spoil pile storage, coal storage and service roads. As mining proceeded, reclamation would follow as closely behind as safety would allow. The underground operations would not disturb the surface of the Evans LMA as demonstrated by previous mining activity.

Exploration operations would take place ahead of mining activities to accurately locate the coal cropline and the old underground works. The exploration drilling program would utilize a rubber-tired drill truck, operating only during dry weather. Drill holes would be 6 inches in diameter and as deep as 300 feet. An estimated 0.1 acre would be disturbed at each drill site. All drill holes not encountered during mining would be cemented in compliance with the regulations, returning all drill cuttings to the holes. Each disturbance area would be seeded in conjunction with the reclamation program of the mined area.

Mining would proceed from the northeast to the southwest portion of the Evans LMA. The coal would be mined in cuts of several hundred yards, the first along the cropline, with succeeding cuts downdip until a highwall of approximately 90 feet is reached. The surface mining operations would include stripping and stockpiling of topsoil with a scraper, dozer or loader. The topsoil storage piles would be marked as topsoil, seeded and mulched. Overburden would be drilled, shot and removed by dozers, loaders, scrapers and a dragline. All surface water would be passed through sedimentation ponds, holding pollution from these areas within the limits required by water quality enforcement agencies.

Reclamation would be accomplished by backfilling the pits to the approximate original contour, followed by spreading of topsoil. The area would then be fertilized and seeded with mixtures of legumes and grasses. Bermuda grass, lespedeza, clovers, fescue, and rye grass all have good growth potential for this area. All disturbed areas would be seeded within one year of disturbance. The present use of the land is for grazing and the land would be returned to tame pasture.

No detailed mining and reclamation plan has been developed for the Evans LMA. A mining and reclamation plan for the underground mineable coal would be filed at a later date, addressing the requirements of 30 CFR Chapter 7 and 43 CFR 3480.

Proposed Operations - Laredo

Geologic information for the Laredo LMA indicates the mineable coal is the Lower Hartshorne coal bed with an estimated average thickness of 28 inches. The Upper Hartshorne coal bed is not present on the LMA. The coal is considered to be a medium quality, low volatile bituminous rank coal which could be used as an industrial coal. The Laredo LMA contains an estimated 65,000 tons of surface mineable coal. Reserve estimates are made to a depth of 45 feet.

Projected production from surface operations on the Laredo LMA would be 10,000 tons per month. Seventeen acres of land would be surface mined and another 26 acres would be disturbed for topsoil storage, spoil pile storage, coal storage and service roads. As mining proceeded, reclamation would follow as closely behind as safety would allow. The coal on the LMA would be mined in one year or less at the projected rate of production.

Exploration operations would take place ahead of mining activities to accurately locate the coal cropline and the old underground works. The exploration drilling program would utilize a rubber-tired drill truck, operating only during dry weather. Drill holes would be 6 inches in diameter and as deep as 300 feet. An estimated 0.1 acre would be disturbed at each drill site. All drill holes not encountered during mining would be cemented in compliance with the regulations, returning all drill cuttings to the holes. Each disturbance area would be seeded in conjunction with the reclamation program of the mined area.

Mining would proceed from the northeast to the southwest portion of the Laredo LMA. The coal would be mined in cuts angling across the dip with succeeding cuts proceeding in a westerly direction. After the initial cut is completed, spoil from succeeding cuts would be placed in the adjacent mined-out cut. The surface mining operations would include stripping and stockpiling of topsoil with a scraper, dozer or loader. The topsoil storage piles would be marked as topsoil, seeded and mulched. Overburden would be drilled, shot and removed by dozers, loaders, scrapers and a dragline. All surface water would be passed through sedimentation ponds, holding pollution from these areas within the limits required by water quality enforcement agencies.

Reclamation would be accomplished by backfilling the pits to the approximate original contour, followed by spreading of topsoil. The area would then be fertilized and seeded with mixtures of legumes and grasses. Bermuda grass, lespedeza, clovers, fescue, and rye grass all have good growth potential for this area. All disturbed areas would be seeded within one year of disturbance. The present use of the land is woodland and the land would be returned to the same use.

No detailed mining and reclamation plan has been developed for the Laredo LMA. The plan must conform to the applicable regulations and standards in effect at the time of submission. Regulations presently in effect are contained in 30 CFR Chapter 7 and 43 CFR 3480.

B. DESCRIPTION OF THE NO ACTION ALTERNATIVE

Under this alternative, the Southeast Oklahoma MFP would not be amended to designate the two proposed Federal coal lease modification areas as acceptable for further consideration for leasing and subsequent development. The modification requests would be denied and the Federal coal reserves would not be recovered along with adjacent mining operations. Based on available technology and current economic conditions, the modification reserves would become isolated, future recovery unlikely.

C. DESCRIPTION OF THE PARTIAL ACTION ALTERNATIVE

Under this alternative, the Southeast Oklahoma MFP would be amended to designate only one of the proposed Federal coal lease modification areas as acceptable for further consideration for leasing and development. This situation would occur if the environmental consequences of one of the proposals precluded further consideration for leasing and development of the reserves. By adopting this alternative, the other modification area could still be designated as acceptable for further consideration for leasing.

CHAPTER 4

AFFECTED ENVIRONMENT

This chapter describes in summary form those components of the existing environment that are likely to be impacted by the Proposed Action or other alternatives. Descriptions are proportionate to the expected size, intensity, and duration of impacts.

A. COMPONENTS OF THE AFFECTED ENVIRONMENT

Critical Elements

The BLM is required to address the following critical elements: 1) Areas of Critical Environmental Concerns (ACECs); 2) Wilderness Study Areas (WSAs); 3) Prime or Unique Farmlands; 4) Floodplains; 5) Sole Source Aquifers; 6) Threatened and Endangered (T/E) Plants and Animals; 7) Visual Resources; and, 8) Cultural Resources.

1. Areas of Critical Environmental Concerns

The LMAs have not been designated as ACECs.

2. Wilderness Study Areas

The subject lands are not included in any WSA.

3. Prime or Unique Farmlands

No prime farmland soils would be affected by the proposed amendment.

4. Sole Source Aquifers

No sole source aquifers would be affected by the proposed amendment.

5. Floodplains

No 100-Year floodplains occur on either LMA.

6. Threatened and Endangered Plants and Animals

This Proposed Action is not likely to affect any Federal T/E plant or animal species, Federally designated critical habitat, species proposed for Federal listing, or category one or two species under review by the U.S. Fish and Wildlife Service (F&WS). Informal consultation with the F&WS and T/E evaluations were completed by the BLM and resulted in a no-affect determination. The T/E species evaluation materials are available for review at the Bureau of Land Management, Oklahoma Resource Area Headquarters, 200 N.W. Fifth Street, Room 548, Oklahoma City, Oklahoma, 73102.

7. Visual Resources

Both modification areas fall into a Visual Resource Management (VRM) Class IV. In this VRM class the level of change to the characteristic landscape can be high although attempts should be made to minimize the impacts through careful location, minimal disturbance, and repeating the basic elements.

8. Cultural Resources

A Class III cultural inventory has been performed on the Evans LMA. No sites are listed on the National Register of Historic Places nor were any new sites located as the result of this survey. However, based on the topographic and hydrologic setting, subsurface archeological materials are likely to be encountered. The proximity of the Evans LMA to Redbank Creek adds to the likelihood that this area was utilized during prehistoric times. Prior to the opening of this area to settlement, the land was inhabited by the Five Civilized Tribes. In addition, the Evans LMA is in the general vicinity of Spiro, Oklahoma, and the location of Spiro Mounds. The Evans LMA contains evidence of historic mining activity and the remains of one historic structure. The sites are not eligible for nomination to the National Register.

A Class III cultural inventory of the Laredo LMA was conducted by Dr. Donald O. Henry, consulting archeologist, in October, 1987. No sites eligible for the National Register of Historic Places were found. A search of the state site files was conducted prior to the inventory and no other known sites eligible for the National Register of Historic Places were listed, on or adjoining the project area. Due to the topography and depth of the proposed action, the possibility of locating subsurface artifacts remains high.

Topography and Geology

The Evans LMA adjoins Evans Federal lease OK BLM 017612 on the southwest corner. The lease is located in the southern part of the Arkansas Hill and Valley Belt of the Ozark-Ouachita Highland physiographic province. Slopes range from flat to moderate toward the south part of the area. Relief across the area is 120 feet with elevation ranging from 560 feet at the southeast corner to 440 feet on the north side.

Structurally, the Evans LMA is located on the southeast flank of the Milton anticline and the northwest flank of the Bokoshe syncline. The Hartshorne coal outcrop roughly parallels their axes. Strata dips to the southeast at approximately 20 degrees.

The Evans LMA is underlain by rocks of the Des Moinesian Series of the Middle Pennsylvanian Age. The unit exposed is the Hartshorne Formation. This formation is composed primarily of buff to gray, fine grained quartz sandstone (Craney, 1978) with interbedded dark gray shale and coal. The Hartshorne Coal Seam outcrops in the area at or near the top of Hartshorne Formation. The Upper and Lower Hartshorne coal seams outcrop in the area with little or no discernible interburden between them.

The Laredo LMA adjoins Laredo Federal lease OK NM 0141015 on the east end of Pine Mountain. The topography of the LMA is moderate, sloping to the north and east. The maximum relief is about 100 feet with the elevation ranging from 600 feet on the north side to 700 feet at the southwest corner.

Structurally, Pine Mountain is on the axis of the eastward plunging Pine Mountain Syncline. The Pine Mountain Syncline is located on the southern edge of the Arkoma basin about 2.5 miles north of the Choctaw Fault, which separates the strata of the coal basin from the more intensely deformed strata of the Ouachita Mountains. The strata on the LMA dip to the south at approximately 2 degrees.

The rock units in the area are the Pennsylvanian age Atoka and Hartshorne Formations. Only the upper portion of the Atoka Formation outcrops on Pine Mountain. Two unnamed coal beds occur in the Atoka Outcrop.

The Hartshorne Formation is divided into upper and lower members. The top of the Lower Hartshorne coal is the dividing line between the two members. The Lower Hartshorne coal is the only economically important coal seam in the area. The Upper Hartshorne coal is not found on the Laredo LMA.

Mining History

Three underground coal mines have been operated in the Evans LMA. These mines were placed in operation prior to the purchase of the coal rights by the U.S. Government. Breutelschies and Stewart Coal Company's Mine No. 16 was opened on the cropline in the NW1/4NW1/4 of section 25; workings were extended into the NE1/4SW1/4 of section 25. The mine was last worked in 1941.

Davies and Swindle Coal Company's mine was opened on the cropline in the NW1/4NW1/4 of section 25; workings were extended into the SW1/4NW1/4 of section 25. The mine was last worked in 1949.

Bokoshe Coal Company's Mine No. 15 1/2 was opened on the cropline in the SE1/4NE1/4 of section 26; workings were extended into the SW1/4NW1/4 and the NW1/4SW1/4 of section 25. The mine was last worked in the early 1940's.

Evans filed an exploration plan/test burn application for the adjacent Federal lease in 1986. The plan was approved on April 17, 1987. An estimated 65,000 tons were removed from Section 24; the disturbed area is currently being reclaimed. The exploration plan/test burn was modified in June 1988 to allow recovery of Federal coal in Section 19 for test burn purposes, an estimated 12,000 tons have been removed.

There is no evidence of previous mining activity on the Laredo LMA. An area of private coal in the NE1/4 of section 25 was surface mined several years ago. An area in the west one-half of sections 26 and 27 was surface mined by Turner Brothers in the early and mid 1980's. Laredo filed an exploration plan/test burn application for the adjacent Federal lease in 1987. The plan was approved on March 1, 1988. An estimated 10,000 tons have been removed from Section 36.

Soils

Soils occurring on the Evans LMA range from shallow excessively drained ridge crest soils to moderately deep well drained soils on smooth, rolling upland hillsides. Soil data was taken from the published soil survey of LeFlore County, provided by the U.S. Soil Conservation Service. Soil mapping units most likely to be affected by the Evans LMA include the following:

Symbol	Name
2	Bengal-Clebit association, strongly sloping
5	Bengal-Pirum-Clebit complex, 5 to 15 percent slopes
51	Pirum-Clebit complex, 2 to 5 percent slopes
67	Shermore fine sandy loam, 2 to 5 percent slopes, eroded

Bengal-Clebit association consists of moderately deep Bengal soils and shallow Clebit soils. Only the Bengal component would be affected and is typically a stony fine sandy loam to a depth of 7 inches, over 23 inches of clay followed by 6 inches of shaley clay over soft shale. The Bengal soils are well drained, permeability is slow and available water capacity is medium. These soils are low in fertility and organic matter content. Reaction is medium to strongly acid in the surface layer and strongly to very strongly acid in the subsoil. Sandstone cobbles and stones in the surface layer present a hindrance for cultivation. The Bengal soils have a medium potential for native grass. The high shrink-swell potential and plasticity inhibit workability in wet weather.

Bengal-Pirum-Clebit complex consists of moderately deep Bengal and Pirum soils and shallow Clebit soils. The Clebit component would not be affected. The Bengal component is described above. The Pirum soils are typically fine sandy loam to a depth of 6 inches, followed by loam and sandy clay loam to a depth of 30 inches over sandstone. Pirum soils are well drained, permeability is moderate and available water capacity is low. These soils are low in fertility and organic matter content. Reaction is acid throughout. The Pirum soils have a medium potential for native grass.

Pirum-Clebit complex occurs on the Evans LMA, the components have been described previously.

Shermore fine sand loam is a deep, moderately well drained, very gently sloping soil. Occurring on foot slopes and alluvial fans, the soil is fine sandy loam to a depth of 8 inches. The subsoil, extending to a depth of 70 inches, is loam and sandy clay loam over mottled clay loams. This soil is medium in natural fertility, low in organic matter content, and acid throughout. Permeability is moderately slow, available water capacity is medium. A fragipan at a depth of 20 to 40 inches restricts downward movement of water and plant roots. The soil has medium potential for pasture. Rills and gullies are common, erosion has thinned the available topsoil. Fertilizer, lime, and brush control are desirable for reclamation.

Soils occurring on the Laredo LMA range from shallow excessively drained ridge crest soils to moderately deep well drained soils on gently sloping to steeply sloping upland hillsides. Soil mapping units most likely to be affected by the Laredo LMA include the following:

Symbol	Name
2	Bengal-Clebit association, strongly sloping
5	Bengal-Pirum - Clebit association, 5 to 15 percent slopes
9	Carnasaw-Octavia complex, 15 to 35 percent slopes

Bengal-Clebit association consists of moderately deep Bengal soils and shallow Clebit soils. The Bengal component is typically a stony fine sandy loam to a depth of 7 inches, over 23 inches of clay followed by 6 inches of shaley clay over soft shale. The Bengal soils are well drained, permeability is slow and available water capacity is medium. These soils are low in fertility and organic matter content. Reaction is medium to strongly acid in the surface layer and strongly to very strongly acid in the subsoil. Sandstone cobbles and stones in the surface layer present a hindrance for cultivation. The Bengal soils have a medium potential for native grass. The high shrink-swell potential and plasticity inhibit workability in wet weather.

The Clebit component is typically a stony fine sandy loam to a depth of 4 inches, over 9 inches of cobbly fine sandy loam. The underlying material is hard sandstone bedrock. The Clebit soils occur on ridge crests and on side slopes where the interbedded sandstone is near the surface. The Clebit soils are well drained, permeability is moderately rapid and available water capacity is considered low. The soils are low in fertility and organic matter content is low. Reaction is slightly acid to strongly acid in the surface layer and strongly acid to very strongly acid in the subsoil. Sandstone cobbles and stones in the surface layer present a hindrance for maximum topsoil removal. The Clebit soils have a low potential for native grasses and woodland due to shallow depth of topsoil and steepness of slope. The high shrink-swell potential and plasticity inhibit workability in wet weather.

Bengal-Pirum-Clebit complex consists of moderately deep Bengal and Pirum soils and shallow Clebit soils. The Bengal and Clebit soils are described above. The Pirum component is fine sandy loam to a depth of 6 inches, over up to 24 inches of strong brown loam and sandy clay loam. The underlying material is hard sandstone. Pirum soils are moderately permeable and available water capacity is low. These soils are low in fertility and organic matter content. Reaction is acid throughout. Pirum soils have medium potential for native grasses. Soils of the complex have medium potential for bermuda grass, bahiagrass and lespedeza. Fertilizer and lime are essential to introduced grasses and legumes. These soils have a high potential for use as wildlife habitat.

Carnasaw-Octavia complex consists of deep, well drained, stony soils on side slopes. The Carnasaw component is brown stony loam to a depth of 6 inches, over up to 40 inches of red clay. The underlying material is gray shale. Carnasaw soils have slow permeability and available water capacity is medium. The Octavia component is brown stony loam to a depth of 8 inches, over up to 50 inches of gravelly loam to clay. Octavia soils have moderately slow permeability and available water capacity is medium. The root zone is deep and is easily penetrated by plant roots. The soils of this complex are low in fertility and organic matter content. Reaction is acid throughout. Soils of the complex have medium potential for bermuda grass, bahiagrass and lespedeza. Fertilizer and lime are essential to introduced grasses and legumes. These soils have a high potential for use as wildlife habitat.

Water Resources

No streams would be affected by the mining of the Laredo LMA. Unnamed tributaries of Redbank Creek, an ephemeral stream, would be diverted southeast of the proposed disturbance area at the Evans LMA. No other drainage channels would be diverted. Streamflow is variable, with periods of no flow, usually during the late summer and early fall. The alluvium along the stream consists mainly of silt and clay which retains most of the water by capillary action. Surface water on both LMAs is not used for private or public water supply. There are no wells completed within the coal seams and no known wells that would be disturbed. No information is available on ground water quality.

Vegetation

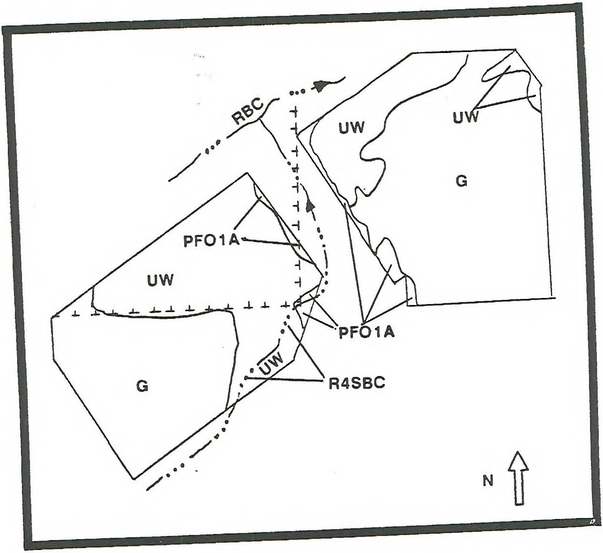
The Evans LMA and the adjacent area of private coal contain three major vegetation types; the oak-hickory upland, the grassland type and the riparian woodland/bottomland hardwood type (PFO1A) (refer to Map 4-1 and Tables 4-1 and 4-2). The Evans LMA is dominated by the grassland/pastureland vegetative type while the private coal area is dominated by the upland woods (oak-hickory) vegetative type.

Vegetation requiring wetter soils occur on both the Evans LMA and the adjacent private coal area. Table 4-1 lists the most common wetland and upland vegetation found on these areas.

The Laredo LMA contains two major vegetation types, the dominant oak-pine forest type and small areas of the grassland type (refer to Map 4-2 and Table 4-1).

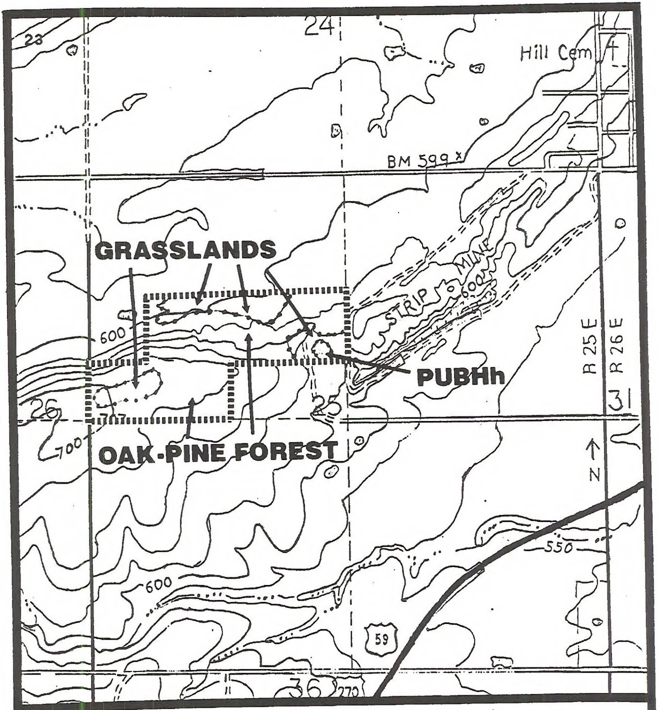
In general the oak-hickory forest type contains approximately 449 tree plants per acre while the oak-pine forest contains 444 tree plants per acre. Both types have little or no understory vegetation. The riparian woodland (PFO1A) type contains 393 tree plants per acre with a 22.9 percent understory cover, whereas 50 to 75 percent ground cover by grasses occurs in the grassland type (Environmental Science and Engineering, Inc., 1980).

MAP 4-1. VEGETATION, WETLANDS AND WILDLIFE HABITATS ON THE EVANS LMA AND PRIVATE COAL



G	GRASSLAND
UW	UPLAND WOODS
PFO1A	RIPARIAN WOOLDLAND/BOTTOMLAND HARDWOODS
R4SBC	UNNAMED STREAM
RBC	RED BANK CREEK
⊥ ⊥ ⊥	ADJACENT PRIVATE COAL

MAP 4-2. VEGETATION, WETLANDS, AND WILDLIFE HABITATS ON THE LAREDO LEASE MODIFICATION AREA



T. 5 N., R. 25 E., SECTION 25:

NE1/4SW1/4NW1/4, S1/2SW1/4NW1/4, N1/2SE1/4NW1/4 IM

▪▪▪▪▪▪ LEASE MODIFICATION AREA

(1/4 MILE)
1,320 FEET

TABLE 4-1

VEGETATION AND HABITAT ON THE PROPOSED DISTURBANCE AREAS

	Evans LMA		Private		Laredo LMA		Total
	Acres 1/	Species	Acres	Species	Acres	Species	Acres
Grassland	25	Bermuda Brome Snakeweed Bluestem Silver Sage	1	Bluestem Brome Foxtail	10	Bluestem Brome Foxtail	36
Oak-Hickory Woods	7	Oaks Hickory Elm Persimmon	6	Oaks Hickory Winged Elm Greenbrier Sumac			13
Oak-Pine Woods					32	Oaks Shortleaf Pine	32
Riparian Woodland (PFO1A)	4	Winged Elm American Elm Hackberry Sedges	3	Winged Elm American Elm Hackberry Sedges			7
Unnamed Streams (R4SBC)	0.1 miles		0.1 miles				0.2 miles
Farm Ponds (PUBHh)					1		1
TOTAL	36		10		43		89

Source: Bureau of Land Management, 1988.

Note: 1/ All units are in acres unless otherwise noted (i.e. miles for R4SBC).

TABLE 4-2

DESCRIPTION OF WETLANDS ON THE LMAs

Map Labels for NWI A/ Classification	Description of Wetland	Vegetation Present
PUBHh Palustrine Unconsolidated Bottom Permanently Flooded (H) Diked and Impounded(h)	Farm ponds constructed for livestock use. These ponds support some wetland plants and aquatic organisms.	Open water is the dominant feature. Plants commonly occurring include willow, cattails, smartweed, and sedges.
R4SBC Riverine Intermittent Flow (4) StreamBed Seasonally Flooded (C)	Unnamed tributary to Redbank Creek.	Winged elm, willow, smartweed, and sedges grow along the banks.
PFO1A Palustrine FOrested Broad-leaved Deciduous(1) Temporarily Flooded(A)	Trees growing in the wetter areas along the R4SBC or wherever wet soils occur.	Hackberry, winged elm, American elm and willow.

Source: Bureau of Land Management, 1988.

Note: A/ The National Wetland Inventory (NWI) is the official U.S. Department of the Interior wetland classification system.

At present, no site specific data is available on vegetative production for either LMA. However, the production on similar soils in the county ranges from 1,600 to 5,000 pounds of air-dried herbage per acre of grassland. Production ranges from 1,200 to 2,400 pounds per acre in the oak-hickory, oak-pine and riparian woodland, depending upon the management and grazing practices (U.S.Department of Agriculture, 1983).

Wetlands

There are two wetland types which occur on the proposed disturbance area of the Evans LMA and one type on the proposed disturbance area of the Laredo LMA (refer to Maps 4-1 and 4-2 and Tables 4-1 and 4-2). These wetlands have been classified according to the F&WS's Classification of Wetlands and Deepwater Habitats of the United States which was published in 1979.

Wetlands, in the form of an intermittent stream (R4SBC) and riparian woodlands (PFO1A) account for 11 percent of the habitats which would be disturbed on the Evans LMA. A farm pond (PUBHh) wetland makes up less than one percent of the habitats on the proposed disturbance area of the Laredo LMA.

Natural wetlands or wetlands which resemble natural wetlands but were created/augmented by past human disturbances include the R4SBC and the PFO1A found on the Evans LMA. No natural wetlands occur on the Laredo LMA. Riparian woodlands and associated wetlands occur on approximately 7 to 10 percent of the total land area in southeast Oklahoma.

Wildlife

The proposed disturbance area of the Evans LMA contains habitats which could support approximately 284 species of wildlife and 9 species of fish (refer to Map 4-1 and Table 4-1). Included among these species are 25 harvest species such as waterfowl, furbearers, big game and small game. Some of the more common species are the red-bellied woodpecker, beaver, whitetail deer and bobwhite quail.

The proposed disturbance area of the Laredo LMA contains habitats which could support 253 species of wildlife and 10 species of fish (refer to Map 4-2 and Table 4-1). Included among these species are 28 harvest species such as gamefish, waterfowl, big game and small game. Wildlife species which would commonly occur on the LMA include whitetail deer, gray squirrels and downy woodpeckers in the forested habitats. The grassland habitat supports bobwhite quail and cottontail rabbits. Raccoons, green-backed herons and leopard frogs could utilize the wetland habitats found around the farm pond.

A high interspersion of habitats, as measured by the number of habitat borders, generally indicates a high wildlife resource value for the area. Habitat borders occur where one habitat type is adjacent to another, such as grassland adjacent to bottomland hardwoods or bottomland hardwoods adjacent to oak forest. The interspersion indices calculated for the Federal Coal Reserve Area (FCRA) in southeast Oklahoma (approximately 370,000 acres) ranged from 0 to 40 and averaged nine habitat borders per square mile. The average habitat interspersion index is 17 per square mile for the Evans LMA and 19 per square mile for the Laredo LMA.

Social and Economic Considerations

The Evans Coal Company is currently mining coal on a Federal lease containing 1,868 acres. The 120 acre tract considered in this amendment adjoins this area on the southwest corner. It is estimated that, to date, the mining has averaged 65,000 tons per year with employment of 20 people and an annual payroll of $600,000. It is also estimated that about 75 percent of the payroll will go into the local economy. The additional lease is expected to produce 63,000 tons of coal over a one-year period.

The Evans LMA is primarily used as grassland/pastureland for grazing purposes. At the present time there is a herd of cattle, estimated to be about 30 head, grazing on the land. There is only one house in close proximity to the LMA. It is predicted that 36 acres of the 120 proposed for lease will be disturbed. The reclamation potential is good.

The Laredo Solid Fuels, Inc. is also currently mining coal on a Federal lease containing 360 acres. The 50 acre tract considered in this amendment is within 1 1/2 miles of this current production area. To date, the mine has produced about 10,000 tons of coal. Eleven people are currently employed with a payroll expected to average about $350,000 per year. It is estimated that about 75 percent of this money will remain in the local economy.

The Laredo LMA is primarily oak-pine forest type with small areas of grassland. At the present time no cattle are grazing on the land and none of the forest is being sold for profit. There is one house in close proximity to the LMA. It is predicted that 43 acres of the 50 proposed for lease will be disturbed. The reclamation potential is fair.

Le Flore County is one of the larger counties in the state but relatively sparsely populated. Most of the area could be classified as rural in character. In 1980 the population was 40,698 with a projection of 4,702 additional inhabitants by 1990. The largest city, Poteau, had 7,087 inhabitants in 1980 while the towns of Spiro and Heavener, the ones closest to the proposed lease area had 2,221 and 2,776, respectively.

The economic conditions of Le Flore County and adjoining counties have been of serious concern to the residents for a number of years. Many of the workers from the Spiro area are employed in the Fort Smith, Arkansas area. Coal mining has been one of the major industries in the area, but currently mining is at a rather low ebb. Since the economic welfare of a considerable number of people is affected by coal mining, many hold a positive attitude toward mining activities.

Residents of the area have not been interviewed recently, however, in 1980, during the development of the Southeast Oklahoma MFP, the local residents viewed coal development as a means for lowering the unusually high unemployment rate, increasing income and stemming the flow of young people out of the area. Also, the local residents desired as little change in the community as possible, with no serious disruption of traditional values and patterns. They also desire a steady rise in coal development levels, maintained over a long period of time, rather than a rapid expansion and decline of mining operations.

Aesthetically, there will be some objectionable impacts. The vibrations associated with the operation of heavy equipment, blasting, and drilling activity in the proposed lease area will be nuisance factors, however, it will not be a new experience to the residents. Mining was started in the Spiro area during the 1940s, ceased about 1958, and started again in 1987. Mining in the Heavener area began in the early to mid 70s, ceased, and then started again in the early 80s for a few years. Removal of vegetation in preparation for mining and the removal of overburden during mining will create some undesirable impacts upon the landscape. The presence of spoil piles would disrupt visual harmony of the topography and landscape. Noise associated with the mining operation will be undesirable for some.

B. INTERRELATIONSHIPS WITH EXISTING ENVIRONMENTAL DATA

Refer to Mining History section of Chapter 4 in this document (Page 15).

C. RECLAMATION POTENTIAL

The potential for reclamation of the Evans LMA is good. Topsoil textures vary from fine sandy loam to silty clay loam, depth ranges from 4 to 11 inches. Due to shallowness of available topsoil on previously-mined areas, maximum recovery in other areas is essential for reclamation success. Soil reaction (pH) ranges from 4.5 to 6.5 in the topsoil and 4.5 to 6.0 in the subsoil. The optimum pH range for establishing bermuda grass cover is 5.5 to 6.5; survival rate at pH below 5.0 is very low. Livestock grazing is the major land use of the area. Addition of lime during seedbed preparation would ensure nutrient availability to grasses.

The potential for reclamation of the Laredo LMA is fair. Topsoil textures vary from fine sandy loam to stony fine sandy loam, depth ranges from 4 to 9 inches. Surface stoniness and slopes ranging from 4 to 20 percent present a hindrance to removing topsoil for storage and later replacement. Due to shallowness of available topsoil, maximum recovery is essential for reclamation success. The large stones found in the topsoil would restrict the use of tillage equipment and seed drills for reclamation. Soil reaction (pH) ranges from 4.5 to 6.5 in the topsoil and 4.5 to 5.5 in the subsoil. The optimum pH range for establishing bermuda grass cover is 5.5 to 6.5; survival rate at pH below 5.0 is very low. The optimum pH range for establishing shortleaf and loblolly pine is between 4.5 and 5.5.

In the interest of erosion control, the seedbed should be limed and planted to grasses and legumes. Planting cool season grasses during early spring or late summer would provide winter vegetative cover while warm season grasses are dormant. Planting warm season grasses and legumes during the period of April through June would enhance the establishment of vegetative cover. Shortleaf and loblolly pines should not be planted until the grasses are firmly established (at least 2 growing seasons). Recommended spacing for seedlings is 6-foot intervals, requiring late winter or early spring planting at a rate of 1,210 plants per acre. The woodland productivity potential is low to moderate.

Native grasses indigenous to the area include bluestems, indian grass and switchgrass. Rangeland productivity ranges from 2,000 to 2,800 pounds per acre. Productivity of woodland understory ranges from 800 to 1,200 pounds per acre. The average annual precipitation (45 inches) is more than adequate for reestablishing adapted species without supplementary irrigation.

CHAPTER 5

THE FEDERAL COAL LANDS REVIEW PROCESS

The land use planning and Federal coal regulations in 43 CFR 1600 and 43 CFR 3400 require the BLM to identify areas acceptable for further consideration for leasing. Because the LMAs have not been covered in a previous land use analysis, this chapter will apply the four coal planning screens to the LMAs: 1) coal development potential; 2) unsuitability criteria; 3) multiple land use decisions; and, 4) surface owner consultation. Acres and tons of coal passing through these screens will be acceptable for further consideration for leasing (refer to Tables 5-1 and 5-2).

A. COAL DEVELOPMENT POTENTIAL

Determination of the coal development potential is the first screen applied during the amendment process. Lands without development potential must be dropped from further consideration for coal leasing.

The Tulsa District has determined that the LMAs have a high potential for development. The Evans LMA has 10 acres and 63,000 tons of strippable reserves and 73 acres and 325,000 tons of underground mineable reserves. The Laredo LMA has 17 acres and 65,000 tons of strippable reserves. The lessee in each case is mining a Federal coal lease adjacent to the LMA and has requested the modification to maximize recovery and avoid a bypass situation. Based on the high development potential, the LMAs have passed this screen.

B. UNSUITABILITY ASSESSMENT

Application of the unsuitability criteria screens out land unsuitable for all or certain stipulated methods of surface mining. Application of the unsuitability criteria is as follows:

Criterion	Findings
1 to 2	No Federal lands on the LMAs affected.
3	Public Road Rights-of-Way. The lessee shall not conduct surface mining operations within 100 feet of the graveled county road located on the north and west boundaries of Section 25 (Evans LMA), unless a variance is obtained from the Le Flore County Commissioner and a permit is issued by the Authorized Officer. An estimated 0.5 acres and 5,000 tons are affected by the right-of-way. Application of this criterion is deferred until the permit application is prepared.
4 to 20	No Federal lands on the LMAs affected.

C. MULTIPLE USE ANALYSIS

Multiple use decisions may eliminate additional coal deposits from further consideration for leasing to protect other resource values of a locally important or unique nature not included in the unsuitability criteria. The environmental consequences of amending the MFP and allowing coal development would not preclude the long-term use of noncoal resources on the LMAs. Acquisition of water quality data and development of a wetland/riparian mitigation plan are deferred until the mine plan review process. The reclamation potential has been analyzed in Chapter 4. No areas are eliminated from further consideration for coal leasing by applying this screen.

D. SURFACE OWNER CONSULTATION

The LMAs are split estate lands (private surface overlying Federal coal). None of the surface owners are considered to be qualified surface owners under the provisions of Section 714 of the Surface Mining Control and Reclamation Act of 1977. The surface owners on the Evans LMA do not reside in the county and do not receive a significant portion of their income from farming and ranching operations conducted on the land. The surface owners on the Laredo LMA do not have their principal place of residence on the LMA, do not personally conduct farming or ranching operations on the LMA and do not receive a significant portion of their income from farming and ranching operations conducted on the land. No areas are eliminated from further consideration for coal leasing by applying this screen.

TABLE 5-1

SCREENING OF SURFACE MINEABLE AREAS

	Evans LMA		Laredo LMA	
	Acres	Tons	Acres	Tons
Areas with coal development potential	10	63,000	17	65,000
Areas deleted due to unsuitability criteria	0	0	0	0
Areas where unsuitability criteria apply but may be mitigated	0.5	5,000	0	0
Areas deleted due to multiple use conflicts	0	0	0	0
Areas where multiple use conflicts apply but may be mitigated	0	0	0	0
Areas deleted due to negative surface owner views	0	0	0	0
Areas brought forward for further consideration for leasing	10	63,000	17	65,000

Source: Bureau of Land Management, 1989.

TABLE 5-2

SCREENING OF UNDERGROUND MINEABLE AREAS

	Evans LMA		Laredo LMA	
	Acres	Tons	Acres	Tons
Areas with coal development potential	73	325,000	0	0
Areas deleted due to unsuitability criteria	0	0	0	0
Areas where unsuitability criteria apply but may be mitigated	0	0	0	0
Areas deleted due to multiple use conflicts	0	0	0	0
Areas where multiple use conflicts apply but may be mitigated	0	0	0	0
Areas deleted due to negative surface owner views	0	0	0	0
Areas brought forward for further consideration for leasing	73	325,000	0	0

Source: Bureau of Land Management, 1989.

CHAPTER 6

ENVIRONMENTAL CONSEQUENCES AND MITIGATION

This section describes in summary form the impacts of the Proposed Action, the No Action Alternative and the Partial Action Alternative on the existing environment. The impacts of coal development on the Evans LMA and the adjacent Evans Federal lease were assessed previously in an Environmental Assessment prepared by the Tulsa District of the BLM (EA No. NM-047-88-4), and are incorporated by reference. The impacts of development of the Laredo Federal lease were also assessed by the Tulsa District (EA No. NM-047-88-5), and are incorporated by reference. Those impacts are summarized in this Chapter for the convenience of the reader. Descriptions also address recommended stipulations to mitigate the impacts.

A. PROPOSED ACTION (PREFERRED ALTERNATIVE)

Topography and Geology

The stripping of the overburden, on the LMAs, and other surface disturbance resulting from mine operation would alter the natural topography. After reclamation the land would be returned to its approximate original contour. A slight swell could be expected as the stripped overburden cannot be layered and compacted to the same degree as prior to mining.

The geology of the mined area would also be altered. Eighty-five percent of the surface mineable Upper and Lower Hartshorne coal seam would be removed (63,000 tons) from the Evans LMA. Fifty percent of the underground mineable coal would be removed (325,000 tons) from the Evans LMA. Eighty-five percent of the surface mineable Lower Hartshorne coal seam would be removed (65,000) from the Laredo LMA. The coal remaining in the mined area could not be recovered by current mining technology.

Soils

Impacts on soils would result from surface mining activity on 36 acres within the Evans LMA and 43 acres within the Laredo LMA. The horizons of existing soils would be intermixed and soil structure would be changed. The existing favorable microclimate for plants and animals would be lost for the duration of the disturbance.

Removal of vegetation cover, litter, and topsoil would expose soils to wind and water action. The rate of soil loss from erosion on both areas of active surface mining and new seeding would be 12 to 16 tons per acre per year. As the ground cover became established, this rate would decrease. Ground cover could be returned to pre-mining levels in three to four growing seasons after seeding. The rate of soil loss at that time is estimated at 3 to 4 tons per acre per year on the Evans LMA depending on reclamation success. The rate of soil loss after four growing seasons on the Laredo LMA is estimated at 4 to 5 tons per acre per year if reclamation is successful.

The soils of both LMAs are acidic in nature. This could cause problems such as equipment corrosion and reduction of availability of essential plant growth nutrients. Applications of lime and fertilizer would be essential to establish vegetation on reclaimed areas. Compaction and loss of soil structure, reduction of organic matter, fertility levels, and tilth would result in loss of potential productivity. Water infiltration rates and moisture-holding capacity would be reduced until the proposed disturbance areas were reclaimed. Removal of Shermore subsoils during the mining process on the Evans LMA would effectively breakup the fragipan that currently restricts downward movement of water and plant roots.

Water Resources

Overland flow would be diverted around disturbed areas. Runoff and water within any active pits would be channelled to sediment ponds, analyzed, and treated as necessary to meet water quality standards. The fracturing and removal of overburden would expose the limestone and readily weatherable shale to the forces of weathering. Water coming in contact with these materials would increase in total dissolved solids, sulfate, iron, manganese and other indicators of mining. No water may be discharged from the mine site prior to obtaining a water disposal permit from the Oklahoma Water Resources Board.

Until vegetation has established a canopy and rooting pattern similar to that existing prior to mining, evapotranspiration would be reduced; overland flow velocity would be greater; and total runoff from the disturbed areas would be greater. The infiltration rates of replaced soil would increase with improvements in soil structure and vegetative growth, reducing total runoff from the disturbed area after a few years.

The main avenue for ground water entry and movement is between the laminae of shale and limestone, which would be disrupted during the mining sequence. The fractured material, when replaced, would have a greater storage capacity and permeability than the surrounding undisturbed strata, enhancing recharge to ground water. Where fine-sized particles plug openings in the spoil, percolation may be restricted.

As mining would progress downdip, a short-term decline in the potentiometric level would occur in the general area. Water percolating through the replaced spoil would increase in dissolved solids, sulfate, manganese and other constituents. There are no known domestic or stock watering wells that would be affected. Baseline data on ground water quantity and quality must be collected during the permit application process.

Vegetation

Table 4-1 outlines the kinds and acreages of vegetative types which would be impacted on the proposed disturbance area of the LMAs. Forty percent of the vegetation disturbed would be categorized as the grassland/pastureland vegetative type, 15 percent as oak-hickory and 36 percent as oak-pine.

Most of the proposed disturbance area on the Evans LMA would be planted to bermuda grass or left as one or more permanent impoundments. The acreage available for production of livestock forage would be increased on the Evans LMA by approximately 11 acres.

Vegetation disturbed on the Laredo LMA would be replaced with bermuda grass, bluestem grasses and pine trees. Measures should be adopted which would ensure that adequate vegetative cover and soil stability are established and maintained on the Laredo LMA.

The most significant adverse short-term impacts to the vegetative community would be reduced plant diversity and productivity. Both diversity and productivity should increase over time. Plant species such as Illinois bundle flower, hairy vetch, multiflora rose and common sunflower would be included in the planting and reclamation plan. The planting of these species would enhance the short-term plant diversity and the wildlife value of habitat edges (i.e. fence rows, inaccessible areas around ponds, diversions, etc.).

Wetlands

A total of 4 acres and 0.1 miles of wetlands would be impacted as a result of the proposed activity on the Evans LMA (refer to Table 4-1). Wetland habitats are afforded special consideration under Executive Order 11990 (Protection of Wetlands) and BLM Manual/Final Guidelines 6740 (Wetland-Riparian Area Protection and Management). Removal of these wetlands would reduce the diversity of plants, habitats and wildlife species on the Evans LMA.

Impacts to and loss of wetlands would be partially mitigated by leaving at least one post-mining permanent impoundment/pond on the Evans LMA. An effort would be made to increase the shallow water zones around the entire perimeter of each impoundment to encourage the natural colonization and growth of rooted aquatic vegetation and discourage the concentration of livestock use in specific shallow water locations.

Stream habitat diversity would be reduced due to the diversion of overland flow and the diversion of 0.1 miles of the unnamed tributary of Redbank Creek. Banks of the diversion would be seeded to grasses, eroding areas would be sodded. Rip-rap and rock check dams would be used where erosion persisted and where the channel flow identified erodible portions of the diversion channel bottom. Over a period of years natural colonization of the diversion channel by native plants should help restore some of the lost habitat diversity.

Substantial mitigation would be needed if it became necessary to remove all of the trees between the final cuts and the proposed diversion berms on the Evans LMA. Removal of trees and diversion of the southeast to northwest oriented portion of the unnamed tributary that divides the proposed disturbance area into two separate segments (refer to Map 4-1), would result in additional mitigation being necessary. To provide short-term mitigation for either situation, trees and brush removed during stripping would be pushed into piles along one or both sides of the diversion in such a way that the total linear distance occupied by brush piles would be equivalent to fifty percent of the length of the longest berm or bank. Individual brush piles would be no less than 400 square feet in area and no less than five feet tall. Brush piles afford certain advantages over live tree plantings in that they can be moved and replaced to facilitate erosion repair, require no maintenance, cost very little and provide immediate wildlife habitat values. Long-term wildlife, wetland and riparian values would be augmented by planting black locust, cottonwood or other acceptable species along selected segments of the diversion channel.

Wildlife

Most of the species of terrestrial and aquatic animals would be temporarily displaced during the mining and reclamation of each LMA. Less than 15 percent of the number of wildlife species commonly present would be permanently displaced due to removal of all wooded areas, reduced acreage of wetlands, and the planting and maintenance of tame pasture on the reclaimed area.

The interspersion of habitats (i.e. habitat diversity) would be reduced by 10 percent in the section containing the Laredo LMA. The reductions in species and habitat diversity and the comments provided by the F&WS have been addressed in the Wetlands section of this document. Adoption of the mitigative measures outlined in the Wetlands section is necessary to ensure compliance with Executive Order 11990 and compensate for the loss and alteration of aquatic and terrestrial habitats. The proposed action would not cause any reduction in interspersion of habitats on the Evans LMA.

Cultural Resources

An intensive Class III inventory was performed on the Evans LMA, no further inventory will be required at this time. The remains of the structure and cellar located on the Evans LMA would be impacted. The structure consists of only scattered foundation stones, three pieces of rusted metal and the entryway to an underground root cellar. The remains of previous underground activity would also be removed. No other artifactual remains were located. Since the remains are either of recent origin, or are not eligible for inclusion on the National Register of Historic Places, no mitigation would be necessary.

Both of the sites located during previous inventories on the Laredo LMA are not considered eligible for nomination to the National Register of Historic Places, due to the limited artifactual remains at one site and the previous cultural disturbance at the other site. Neither site requires further mitigation.

Should cultural resources be encountered during exploration and mining operations, work on the site would be suspended until the find could be evaluated by a BLM Archeologist, who would also determine the need for further inventory. Adverse impacts on sites determined eligible for nomination to the National Register of Historic Places would be mitigated, either through excavation to retrieve the data contained in the sites, or by avoiding disturbance.

Social and Economic Considerations

The proposed action will have relatively minor impacts on the social and economic environments. The proposed action is not expected to bring new jobs to the area as no additional hiring is anticipated. However, the current level of employment will be maintained and existing income and employment will be extended for another year.

The LMA operations would generate an annual Evans payroll of 600,000 dollars. Federal royalties in excess of 200,000 dollars would be collected, of which 50 percent would be returned to the State of Oklahoma. An additional 22,000 dollars would be collected as Abandoned Mine Lands (AML) fees.

The LMA operations would generate an annual Laredo payroll of 350,000 dollars. Federal royalties in excess of 200,000 dollars would be collected, of which 50 percent would be returned to the State of Oklahoma. An additional 23,000 dollars would be collected as AML fees.

The undesirable impacts, vibrations, blasting, noise, etc., might cease in the LMA somewhat sooner if the proposed action is not approved. However, if a choice of no job or no unfavorable impacts is to be made, many people would consider the latter necessary for economic progress and jobs in the local area.

The proposed action is consistent with local values and desires, those of little change in the community with no serious disruption of traditional values and patterns, and a steady rise in coal development rather than a rapid expansion and decline of mining operations.

B. NO ACTION ALTERNATIVE

Under this alternative, impacts described for the Proposed Action would not occur. The Southeast Oklahoma MFP would not be amended and the LMAs would not be designated as acceptable for further consideration for leasing and subsequent development. The modification requests would be denied and the unleased Federal and private coal reserves adjacent to the Evans and Laredo leases would not be recovered along with adjacent mining operations. Based on available technology and current economic conditions, the modification reserves would become isolated and future recovery would be unlikely.

Both Evans and Laredo would reclaim the lands disturbed during current operations. Upon completion of reclamation, the 20 Evans employees and 11 Laredo employees would either commute to another company job site, or seek employment elsewhere. Projected revenues from the proposed operations would not occur.

C. PARTIAL ACTION ALTERNATIVE

Under this alternative, impacts described for only one of the proposed modifications would occur. The Southeast Oklahoma MFP would be amended to designate only one of the proposed Federal coal lease modification areas as acceptable for further consideration for leasing and development. The environmental consequences of the other proposal would preclude further consideration for leasing and development of the reserves. By adopting this alternative, one modification area could still be designated as acceptable for further consideration for leasing.

CHAPTER 7

COORDINATION, CONSISTENCY AND PUBLIC PARTICIPATION

A. CONSULTATION AND COORDINATION IN THE PREPARATION OF THE DRAFT AMENDMENT

Letters were sent to 18 Federal, state, and local agencies requesting their participation in the land use planning amendment process. The letters invited comments concerning issues, potential impacts, regulatory involvement and planned projects for consideration in the amendment. A summary of the comments received is shown in Table 7-1.

B. CONSISTENCY

The only known inconsistency for the proposed action is that the existing BLM SE Oklahoma MFP as it is now written does not allow for this action to take place. If a decision is made to approve the action it will also serve as the necessary documentation to amend the SE Oklahoma MFP to make it consistent. No other known inconsistencies exist with other officially approved or adopted plans of other Federal agencies and state and local government. The Draft Amendment has been sent to the Governor of Oklahoma for a consistency review with state and local plans, policies and programs.

C. PUBLIC COMMENTS AND RESPONSE

This section, to be prepared for the Final Amendment, will contain the comments received on the Draft Amendment. Responses to the comments will also be included.

TABLE 7-1

CONSULTATION AND COORDINATION SUMMARY

RESPONDENT	RESPONSE SUMMARY
A. Federal Agencies	
Department of the Army Corps of Engineers Tulsa District	Development of the LMAs would not involve work in a water of the United States. A Department of the Army regulatory permit pursuant to Section 404 of the Clean Water Act would not be required. The proposed projects must be accomplished in a manner that would not increase flood hazards.
U.S. Department of the Interior U.S. Fish and Wildlife Service	Main concern for the LMAs is proper reclamation and consideration for wetland habitats during reclamation. No T/E species occur and none of the wildlife unsuitability criteria apply.
Office of Surface Mining Reclamation and Enforcement	Oklahoma Department of Mines has submitted a proposed cooperative agreement to regulate surface mining and reclamation activities on Federal lands in Oklahoma. Coal exploration is an issue of concern with the agency. Unless an applicant for an exploration permit can demonstrate the end user's need to test the coal's properties, the tests to be performed, the need to use the specified amount for testing, the criteria for a successful test, the end user's need for additional coal if the tests are successful, and the applicant's ability to supply the needed additional coal from the location of the exploration operation, the applicant must be required to obtain a surface coal mining and reclamation permit pursuant to 30 CFR Parts 773-785.

TABLE 7-1 (Cont.)

CONSULTATION AND COORDINATION SUMMARY

RESPONDENT	RESPONSE SUMMARY
B. State Agencies	
Oklahoma Biological Survey Oklahoma Natural Heritage Program	No record of occurrences of rare species or ecologically important biotic communities near the LMAs. No recent field inspections have been performed.
Oklahoma Department of Wildlife Conservation	None of the wildlife unsuitability criteria apply. There are no state T/E species concerns for the LMAs. Proper reclamation of stream diversions was emphasized.
Oklahoma Historical Society	No properties are documented within the LMAs that meet the criteria for listing on the National Register of Historic Places. There is little likelihood that such historic properties will occur.
Oklahoma Water Resources Board	The Board requires that a waste disposal permit be obtained for any direct discharge of wastewater which is removed from strip mining pits during operation. The Board requires preliminary water quality analysis of the water to be discharged prior to issuance of a permit.

CHAPTER 8

LIST OF PREPARERS

This amendment was prepared by a team of BLM professionals from the Oklahoma Resource Area and the Tulsa District Offices. Report writers, support personnel and other contributors to the effort are listed in Table 8-1.

TABLE 8-1

LIST OF PREPARERS

Name	Position	Area of Responsibility
Ernest Achterberg	Mining Engineer	Topography, Geology, Mining History, Mining Operations
Sharon Dries	Technical Information Specialist	Records Research, Maps, Land Uses
Jim Gegen	Supervisory Multi-Resource Specialist	Document Format, Soils, Reclamation Potential, Technical Coordination
Phil Keasling	Wildlife Biologist	Wildlife, Vegetation, Wetlands, Cultural Resources
Betty Mauldin	Area Clerk	Word Processing
Beverly Ray-Edwards	Technical Information Specialist	Social and Economic Considerations, Editor
Bonnie West	Cartographer	Document Cover

CHAPTER 9

REFERENCES

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